

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number
WO 2005/021474 A1

(51) International Patent Classification⁷: C07C 27/00, 27/20, B01J 23/00, 23/40, 23/58, 23/60, 8/18, F27B 15/08

(21) International Application Number:
PCT/US2004/027172

(22) International Filing Date: 20 August 2004 (20.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/496,840 21 August 2003 (21.08.2003) US
60/534,434 6 January 2004 (06.01.2004) US

(71) Applicant (for all designated States except US): PEARSON TECHNOLOGIES, INC. [US/US]; 20088 Norm Connell Drive, Aberdeen, MS 39730 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): PEARSON, Stanley, R. [US/US]; 544 S. Lakeview Drive, Baton Rouge, LA 70810-4631 (US).

(74) Agent: DOLCE, Marcus, P.; Price, Heneveld, Cooper, DeWitt & Litton, LLP, 695 Kenmoor, S.E., Grand Rapids, MI 49501-2567 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/021474 A1

(54) Title: PROCESS AND APPARATUS FOR THE PRODUCTION OF USEFUL PRODUCTS FROM CARBONACEOUS FEEDSTOCK

(57) Abstract: A carbonaceous feedstock to alcohol conversion process in which carbon dioxide and a portion of the hydrogen produced are removed from the syngas stream issuing from a feedstock reformer, to yield a reduced hydrogen, carbon monoxide and methane syngas stream. The hydrogen and the carbon dioxide are passed through a Fischer-Tropsch reactor which is catalyzed to favor the production of methanol. The methanol produced in the Fischer-Tropsch reactor is passed with the reduced hydrogen syngas through a second Fischer-Tropsch reactor which is catalyzed to favor the production of ethanol. Also disclosed, without limitation, are a unique catalyst, a method for controlling the content of the syngas formed in the feedstock reformer, and a feedstock handling system.